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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 08/851,465 | 05/05/1997 | EDGAR C. ROBINSON | INT21246 | 5986 |
| 7590 | 08/11/2004 | | EXAMINER | |
| JOHN RUSSELL UREN STE 202 1590 BELLEVUE AVE WEST VANCOUVER, CANADA | | | COCKS, JOSIAH C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3749 | |

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 08/851,465 | ROBINSON ET AL. |
| | Examiner | Art Unit |
| | Josiah Cocks | 3749 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 March 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-8 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed 3/10/2004 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nutten et al.* (US # 3,428,406) (hereinafter “*Nutten*”) in view of *Reichhelm* (US # 3,361,183) and *Bennett* (US # 4,061,463).

Nutten discloses in Figures 1-32 a liquid fuel burner assembly comprising an air aspirated nozzle (40), a compressor to provide air under positive pressure to the air aspirated nozzle, a zero pressure regulator (60), a fuel supply tank to supply liquid fuel in liquid form and at ambient pressure to the air aspirated nozzle, the fuel entering the nozzle under negative pressure created by air entering the air aspirated nozzle under positive pressure, a manual isolation valve (58), a fuel control valve (110) configured to control liquid fuel supplied to the burner nozzle based on the air flow to the nozzle such that fuel flow is halted in the event of failure of the air flow, and pressure actuated arrangements for controlling flow of liquid fuel to the burner (see col. 9, lines 14-34). *Nutten* further discloses that air and fuel are combusted within a burner that is immediately adjacent to and downstream of the air-aspirated nozzle (40) (see col. 4, lines 28-32).

Nutten possibly does not disclose a manual metering valve interposed between the liquid fuel supply and air aspirated nozzle which is adjustable during operation of the burner assembly or that the burner is an infrared burner.

Reichhelm teaches a liquid fuel burner in the same field of endeavor as *Nutten* wherein the burner of *Reichhelm* includes manual air control (34) and liquid fuel control (22) valves, wherein during operation of the burner these valves are arranged to control/meter the fuel flow and the air flow in accordance with desired flame settings (see col. 6, lines 1-4).

Bennett teaches a liquid fuel burner in the same field of endeavor as *Nutten* wherein *Bennett* explicitly notes that infrared burners are simply a category of burner that includes the use of the burner in conjunction with a incandescent surface such that flames produced by the burner are not used for direct heating but are projected against the incandescent surface to radiate heat (see col. 1, lines 10-36 and col. 3, lines 15-18).

Therefore, in regard to claims 1-8, it would have been obvious to a person of ordinary skill in the art at the time the invention was made; to modify the fuel control valve of *Nutten* to incorporate the metering/controlling mechanisms of *Reichhelm* for the desirable purpose of controlling air and fuel ratio such that desired characteristics of burner performance may be achieved (see *Reichhelm*, col. 5, lines 54-57) and a safety hazard may be prevented from occurring (see *Nutten*, col. 9, lines 28-34), and to modify the burner of *Nutten* to be an infrared burner as taught in *Bennett* as infrared burners are preferred when using liquid fuel because of their cleanliness and efficiency and because these burners minimize the possibility of flame quenching (see *Bennett*, col. 3, lines 18-27).

Response to Arguments

5. Applicant's arguments filed 3/10/2004 have been fully considered but they are not persuasive. Applicant argues that the *Bennett* reference does not disclose combusting air and fuel at a burner that is located immediately adjacent to and downstream of an air-aspirated nozzle. However, as noted in section 4 above, the primary reference relied upon, *Nutten*, discloses combusting air and fuel at a burner that is located immediately adjacent to and downstream of an air-aspirated nozzle. Therefore, this limitation does not distinguish over the cited prior art.

Applicant also argues that *Reichhelm* does not disclose proportioning the air and fuel flow during operation of the burner. However, *Reichhelm* clearly discloses that the valves (22 and 34) are proportioned to obtain desired flame settings. Though, not entirely clear from applicant's response, it appears that applicant is arguing that metering/proportioning "during operation of the burner" is distinct from metering/proportioning at start-up of the burner.

However, the examiner considers that the phrase “during operation of the burner” is properly interpreted to include operation at start-up and thus the proportioning of the valves described in *Reichhelm* is properly considered proportioning/metering during operation. Further, the examiner notes that *Reichhelm* describes the proportioning of the valves to be a component of burner operation (see col. 5, lines 74-75) and thus constitutes proportioning/metering during operation of the burner. However, even if the valve proportioning/metering at start-up is not properly considered to be proportioning/metering during operation of the burner, the valves of *Reichhelm* are manual valves that would clearly be capable of being adjusted during operation of the burner. Applicant does not claim any valve structure that is distinct from that of *Reichhelm*.

Applicant’s claims 1-8 are not considered to define over the prior art.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 3749

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached at (703) 308-1935. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
August 2, 2004


JOSIAH COCKS
PRIMARY EXAMINER
ART UNIT 3749